

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF CLAIMS:

1-15 (cancelled)

16.(new) An apparatus for treating patients suffering from vascular disease by means of a combination of infra-, audible- and ultrasound waves, comprising

- a treating head (15) for emitting sound waves with frequencies ranging from 1 Hz to 100 kHz and introducing said sound waves through a coupling medium (20) into a body portion (22) to be treated,
- an electronics (12) connected to said treating head (15) for energizing said treating head (15) to emit said sound waves, and
- a control panel (11) connected to said electronics (12) to choose the electronic waveform of the energizing.

17.(new) The apparatus according to Claim 16, wherein said treating head (15) is formed as an electromagnetic or a piezoelectric tool.

18.(new) The apparatus according to Claim 17, wherein said treating head (15) comprises a metallic base plate (28) having a treating surface (26) embedded into a holder (27) and several exciting means (29) arranged apart from each other on the face of the base plate (28) opposite to the treating surface (26) in a

given geometry, wherein the projections of the exciting means (29) onto the mentioned face of the base plate (28) fall within the contour of the base plate (28).

19.(new) The apparatus according to Claim 18, wherein said geometry is chosen in such a way that said sound waves generated as the superimposition of the sound waves emitted by the exciting means (29) and to be fed into the body portion (22) have frequencies ranging from 1 Hz to 100,000 Hz.

20.(new) The apparatus according to Claim 18, wherein said holder (27) of the treating head (15) is made of a plastic material, said base plate (28) is made of aluminium and said exciting means (29) are cut away from a piezoelectric crystal with a crystal axis orientation that ensures inverse piezoelectric effect of said exciting means (29).

21.(new) The apparatus according to Claim 20, wherein said base plate (28) and said exciting means (29) are of disc shape.

22.(new) The apparatus according to Claim 21, further comprising a heating device (17) and a thermometer (16) for measuring the temperature of the body portion (22) to be treated, wherein said heating device (17) and said thermometer (16) are connected to said electronics (12).

23.(new) The apparatus according to Claim 22, wherein the treating head (15) is equipped with a thermal sensor (25) for controlling said heating device (17).

24.(new) The apparatus according to Claim 23, wherein said heating device (17) is attached to a resilient thermal blanket (18) being capable for receiving the body portion (22) to be treated and maintaining the temperature between 25°C and 50°C, preferably between 30°C and 45°C within the thermal blanket (18).

25.(new) The apparatus according to Claim 24, further comprising a pulsimeter (14) for measuring the strength of the patient's pulse.

26.(new) The apparatus according to Claim 25, wherein said treating head (15) emits sound waves with frequencies and energy densities adjusted and controlled, optionally taking into account data measured by said thermometer (16) and said pulsimeter (14), by said electronics (12) via the control panel (11).

27.(new) The apparatus according to Claim 25, wherein said heating device (17) generates heat and thereby maintains a preset temperature within said thermal blanket (18), wherein the amount of heat generated can be adjusted and controlled, optionally taking into account data measured by said thermal sensor (25) and said thermometer (16), by said electronics (12) via the control panel (11).

28.(new) The apparatus according to Claim 16, further comprising a heating device (17) and a thermometer (16) for measuring the temperature of the body portion (22) to be treated, wherein said heating device (17) and said thermometer (16) are connected to said electronics (12).

29.(new) The apparatus according to Claim 16, further comprising a pulsimeter (14) for measuring the strength of the patient's pulse.

30.(new) The apparatus according to Claim 16, wherein the coupling medium (20) is a material in gelous state.

31.(new) The apparatus according to Claim 16, wherein the energy density of said sound wave emitted by the treating head (15) is at most  $0.1 \text{ W/cm}^2$ , preferably  $0.06 \text{ W/cm}^2$ .

32.(new) The apparatus according to Claim 16, wherein said treating head (15) in a single treatment unit emits sound waves with frequencies continuously increasing within the period of 1 s to 200 s of said treatment unit from 1 Hz to 200 Hz at a rate of 1 Hz per seconds, then within the period of 200 s to 208 s of said treatment unit from 200 Hz to 1,000 Hz at a rate of 100 Hz per seconds, and finally within the period of 208 s to 307 s of said treatment unit from 1,000 Hz to 100,000 Hz at a rate of 1,000 Hz per seconds.

33.(new) The apparatus according to Claim 16, further comprising a visual display unit (13) connected to said electronics (12).

34.(new) A method for treating patients suffering from vascular disease by means of a combination of infra-, audible- and ultrasound waves, wherein the method comprises the steps of providing an apparatus comprising

a treating head emitting sound waves with frequencies ranging from 1 Hz to 100 kHz and introducing said sound waves into a patient's body portion to be treated,

an electronics connected to said treating head for energizing said treating head to emit said sound waves, and

a control panel connected to said electronics to choose the electronic waveform of the energizing;

arranging a coupling medium on said body portion;

bringing said treating head into contact with said coupling medium;

choosing the waveform of the energizing;

applying said sound waves on said body portion via energizing said treating head by the electronics in accordance with the chosen waveform.

35.(new) The treating method according to Claim 34, wherein the waveform is chosen in such a way that the treating head emits sound waves with frequencies continuously increasing from 1 Hz to 200 Hz at a rate of 1 Hz per seconds within the period of 1 s to 200 s thereof, then from 200 Hz to 1,000 Hz at a rate of 100 Hz per seconds within the period of 200 s to 208 s thereof, and finally from 1,000 Hz to 100,000 Hz at a rate of 1,000 Hz per seconds within the period of 208 s to 307 s thereof.

36.(new) The treating method according to Claim 34, wherein the treatment unit defined by said waveform is effected at least once.

37.(new) The treating method according to Claim 35, wherein a heating device connected to said electronics and attached to a resilient thermal blanket being capable for receiving the body portion to be treated is also provided;

the body portion is arranged within said heating device; and by means of said heating device and said thermal blanket a simultaneous hot chamber treatment of said body portion is carried on.